Deuce® Pro

Intelligent Video Scaler

USER'S MANUAL

Model 2210A

WORLD HEADQUARTERS
55 Cabot Court
Hauppauge, NY 11788 USA
TEL: (631) 273-0404 FAX:(631) 273-1638
WWW: http://www.commspecial.com
EMAIL: info@commspecial.com

Communications Specialties Pte Ltd
100 Beach Road
#22-09 Shaw Tower
Singapore 189702
TEL: +65 6391 8790 FAX: +65 6396 0138
EMAIL: csiasia@commspecial.com

P/N 121476 Rev. E
Copyright ©2001

CONTENTS

Introduction 3

Installation 4
- *Connecting the Power* 4
- *Connecting the Inputs and Outputs* 4
- *Selecting the Input Source* 4
- *Selecting the Input Aspect Ratio* 4
- *Selecting the Output Format* 5
- *Selecting the Output Rate* 5

Operation 6
- *Video Processing* 6
- *V-Crop* 7
- *Key Panel Lock/Unlock* 7
- *Global Reset* 7
- *Custom Output Formats* 7
- *Custom Output Formats Reset* 7
- *RS-232 Remote Control* 7

Internal Dip Switch Settings 8
- *Accessing the Switch* 8
- *Setting the Dip Switch* 8

Output Timing Specifications 9

Troubleshooting 10

Accessories 11

Rear Connector Pin-Outs 12

Statement of Warranty 13

INCLUDED WITH THIS PRODUCT YOU SHOULD HAVE:

1 - Deuce Pro Intelligent Video Scaler
1 - AC power line cord
1 - 12 foot composite video input cable
1 - 12 foot S-video input cable
1 - 6 foot RS-232 Control cable
1 - Rackmount kit
1 - User's Manual
1 - Product Registration Card

AVAILABLE OPTIONAL ACCESSORIES

- See page 11 for a list of available accessories

Deuce is a registered trademark of Communications Specialties, Inc.
Macintosh and Mac are registered trademarks of Apple Computer, Inc.

FCC STATEMENT:

WARNING: This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his/her own expense, will be required to take whatever measures may be required to correct the interference.

UL INFORMATION:

This product carries the UL and CUL marks for ITE equipment, File E173243; Project 99ME42861, ASK/C.

CE INFORMATION:

Standards to which conformity is declared:
Emission requirements: EN 55022: 1998 Class B

Immunity requirements: EN 50082-1: 1992
IEC 801-2:1984
IEC 801-3:1984
IEC 801-4:1988

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRONIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRONIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electronic shocks.

This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

INTRODUCTION

Communications Specialties, Inc.
55 Cabot Court
Hauppauge, NY 11788 USA
TEL: (631) 273-0404
FAX: (631) 273-1638
WWW: http://www.commspecial.com
EMAIL: info@commspecial.com

Communications Specialties Pte Ltd
100 Beach Road
#22-09 Shaw Tower
Singapore 189702
TEL: +65 6391 8790
FAX: +65 6396 0138
WWW: http://www.commspecial.com
EMAIL: csiasia@commspecial.com

Thank you for purchasing *Deuce Pro*, the Intelligent Video Scaler. With Deuce Pro, you now have the ability to enjoy high-resolution, film-like images from any standard video source, including broadcast or cable TV, video tape, DVD and laser disc. Deuce Pro converts any composite, S-video or component signal into one of ten computer resolutions. These resolutions match the native resolution or "sweet spot" of almost any LCD, DLP or plasma projector or display, allowing the display device to perform to its maximum potential. In addition, Deuce Pro uses advanced motion compensation to eliminate the artifacts typically visible when interlaced video is de-interlaced. The result is a picture of stunning quality, filled with rich detail and color.

Like all the products from Communications Specialties, Deuce Pro comes with our continuing commitment to provide support. In order to assist us in this process, please be sure to mail in your product registration card. This will make it easier for us to notify you with any new product announcements or other information concerning our product line. Should you need to contact us for support, our office is open Monday through Friday, from 8:30 AM to 5:00 PM Eastern Time. We also offer a comprehensive web site for your added convenience.

Thank you for choosing Deuce Pro. As always, we welcome your comments and suggestions.

INSTALLATION

CONNECTING THE POWER:

Plug the provided AC power cord into the AC input on Deuce Pro's rear panel and into an AC power outlet. Deuce Pro features an auto-sensing internal power supply which makes the unit compatible with worldwide electrical standards.

CONNECTING THE INPUTS AND OUTPUTS:

Video Source (Input): Connect one or more video sources to the *composite*, *S-video* and/or *component* inputs on the rear panel. Audio associated with each input may be connected to the corresponding audio jacks.

Both the *Video 1* and *Video 2* inputs allow for you to provide an S-video and/or a composite video source. If desired, you may hook up both types of sources to the two connectors identified for each input. However, if both types of signals are connected, Deuce Pro will automatically sense the S-video signal as the default source for that input.

Computer Input Support: An HD-15 connector, labeled *VGA*, provides the option to input any type of computer signal which may then be selected as one of the switchable outputs. Deuce Pro does not perform any scaling or processing of this input. (To select this input as Deuce Pro's output, simply press the *Input Source* button marked *VGA* on the front panel of the unit.)

Audio Support (input): Each video input and the computer input have a set of stereo jacks associated with them. When an input source is selected, the respective audio is automatically switched to the *Audio Out* jacks. This is a passive, unterminated switch.

Display Device (Output): Connect a computer monitor, projector, display or routing switcher to either the BNC connectors or the VGA connector on the rear panel. Both outputs may be connected at the same time.

SELECTING THE INPUT SOURCE:

In the *Input Source* section of the front panel, push the button for the desired input video source.

If you select "VGA," Deuce Pro will not perform any scaling or processing of the image.

SELECTING THE INPUT ASPECT RATIO:

In the *Input Aspect* section of the front panel, push the *Select* button repeatedly to scroll through and select the correct input aspect ratio.

4:3: This is the aspect ratio of a standard or "normal" video monitor.

Letterbox: Deuce Pro supports three letterbox or widescreen formats; 16:9, 1.85:1 and 2.35:1. If using a widescreen source, such as a DVD, check its box to see which of the widescreen aspect ratios it uses.

SELECTING THE OUTPUT FORMAT:

In the *Output Format* area of the front panel, press the *Select* button repeatedly to scroll through and select the desired output resolution. The last two formats are identified as *Custom 1* and *Custom 2*. These are user-defined outputs. Refer to the explanation of the *Custom Output Formats* feature, on page 7 of this manual, for more information.

IMPORTANT NOTE: If you are using a discrete, or *fixed*, resolution display device (not a CRT), you will benefit from the best quality image by selecting the resolution that matches your display's *native resolution.* This is *not* necessarily the highest resolution that the device will support. An extensive listing of the native resolutions of various projects and display devices can be found beginning on page 15 of this manual. As new projector and display models are introduced to the marketplace, an updated version of this list will be available at our web site: www.commspecial.com.

SELECTING THE OUTPUT RATE:

In the *Output Rate* section of the front panel, press the *Select* button repeatedly to scroll through and select the desired output refresh rate. The *Input Lock* option in this section automatically matches the Deuce Pro's output vertical refresh rate to the refresh rate (per field) of your incoming video source.

OPERATION

Deuce Pro is designed to operate properly with any projector or display while requiring minimal set-up and adjustments. However, you may want to take advantage of Deuce Pro's many additional features, including its video processing controls, as they are designed to provide enhanced picture quality and added convenience. On current models of Deuce Pro (Models 2210A), video processing functions may be used with all input source types.

VIDEO PROCESSING:

In the *Process* section of the front panel, press the *Select* button repeatedly to scroll through the various video processing functions. As you select each function, the LED bar graph will indicate that function's current, relative position or level. Following is a description of how to use the + and - keys in conjunction with the selected function in order to manipulate or process the image.

NOTE: Pressing the + and - buttons simultaneously will return the selected function to its default or "detent" position.

H Position: The + button will shift the output image to the right; the - button will shift it to the left.

V Position: The + button will shift the output image up; the - button will shift it down.

Detail: Increases or decreases the detail and sharpness of the image.

Luma Noise: Controls the amount of noise that may be present at the input source. This is particularly useful if you are using a noisy video tape as your source.

Chroma Noise: Controls the amount of noise present in the color portion of the input video signal.

Brightness: Increases or decreases the overall brightness, or "black level," of the video source.

Contrast: Increases or decreases the overall contrast, or "gain," of the video source.

Saturation: Increases or decreases the color saturation or intensity of the color.

Hue: Adjusts the hue or tint of the color. (This control is not active when using PAL video inputs.)

V-CROP:

This button allows you to eliminate the appearance of "headswitch," the banding that sometimes appears at the bottom of an image being produced by a VCR. Pressing this button will cause a slight vertical expansion of the output image, therefore forcing the headswitch off the bottom of the screen or display and making it no longer visible.

This feature will only work when the 4:3 *Input Aspect* ratio is selected.

KEY PANEL LOCK/UNLOCK:

There may be situations in which you want to prevent other users from changing the settings on Deuce Pro. In order to lock the front panel of the unit, simply press the *Crop* and *Process Select* buttons simultaneously for three seconds. All the LEDs will turn off, indicating that the key panel is now locked.

In order to unlock the panel, repeat the process. After holding down the *Crop* and *Process Select* buttons for three seconds, the LEDs will illuminate, indicating the key panel is again operational.

GLOBAL RESET:

Press the *Input Aspect Select* button for three seconds to reset the unit and return all controls to their factory default settings.

CUSTOM OUTPUT FORMATS:

Deuce Pro provides for two user-defined output formats which can be downloaded through the RS-232 remote control connector. Communications Specialties provides free software to facilitate this operation. Contact us or your dealer for more information

CUSTOM OUTPUT FORMAT RESET:

Press the *Output Format Select* button for three seconds to return the two custom output formats to their factory default resolutions (1280 x 720 and 1920 x 1080).

RS-232 REMOTE CONTROL:

All front panel functions can be controlled through the RS-232 remote control connector. Please contact Communications Specialties or your dealer for software and protocol details.

INTERNAL DIP SWITCH SETTINGS

Inside Deuce Pro there is a 2-position DIP switch, used to set the output sync format. This switch is intended for installation and set-up purposes only. Under normal operation, there is no need to access it.

However, should you need to access it, you should do so as follows:

ACCESSING THE DIP SWITCH:

1. Remove the power and all input and output connections to the unit.

2. Remove the eight screws on the top cover.

3. Remove the top cover and locate the dip switch S1 located in the middle of the circuit board towards the rear panel.

SETTING THE DIP SWITCH:

The following chart indicates the settings for the S1 dip switch:

Position	Function	Position
S1-1	Block Sync	On = Block Off = Serrated (default setting)
S1-2	Sync-On-Green	On = Sync inserted on green output Off = No sync-on-green (default setting)

OUTPUT TIMING SPECIFICATIONS

The timing specifications for the ten output resolutions, including the factory default settings for Custom 1 and Custom 2, follow VESA, Macintosh or SMPTE specifications where applicable.

	Resolution	Refresh	H(kHz)	V(Hz)
	640 x 480	60	31.48	59.96
	640 x 480	75	37.51	75.03
	852 x 480	60	31.73	59.98
	852 x 480	75	38.07	71.97
	800 x 600	60	37.89	60.33
	800 x 600	75	46.89	75.02
	832 x 624	60	39.29	60.07
	832 x 624	75	49.19	75.10
	1024 x 768	60	48.38	60.19
	1024 x 768	75	60.04	75.05
	1280 x 1024	60	64	60.04
	1280 x 1024	75	79.98	75.02
	1280 x 768	60	45.1	56.25
	1280 x 768	75	60.1	75
	1365 x 1024	60	64	60.04
	1365 x 1024	75	79.98	75.02
Custom 1:	720 x 483	60	31.47	60
Custom 2:	1280 x 720	60	45	60

TROUBLESHOOTING

IF THIS IS YOUR PROBLEM	THEN CHECK THE FOLLOWING:
Nothing works	• Are any of the LEDs lit? If not, check to see if the AC cord is plugged into the unit and into the wall outlet. Also, make sure that the unit is turned on, using the power switch on the back panel. • Is the video source connected to the unit? If it is, are you sure that the video source is actually putting out a video signal, as viewed on a video monitor?
No video on outputs (Just a blue screen)	• Is the video source (VCR or other) in the proper mode to output video? • Have you selected the proper input source on the *Input Source* section of the front panel? • Is the video source "on?"
There is video on the output display, but it appears out of sync	• If you are using the 5 BNC connectors on the unit, try reversing the H and V sync connectors. • Are you sure that the display is capable of supporting the resolution you selected on the front panel of the unit? Try a lower resolution.

ACCESSORIES

The following accessories are available for Deuce Pro. They may be ordered from your dealer or from Communications Specialties, Inc. If you need an accessory that isn't listed below or have a specific application for which you need assistance, please give us a call.

ITEM #	DESCRIPTION
1152	RGBS cable for 4 BNC connection. This is a 12-foot cable that connects the RGB output or component input of Deuce Pro to video equipment that uses BNC connectors
1119-06	6 ft. VGA 15-pin M/M or M/F output extension cable
1119-10	10 ft. VGA 15-pin M/M or M/F output extension cable
1119-025	25 ft. VGA 15-pin M/M or M/F output extension cable
1119-050	50 ft. VGA 15-pin M/M or M/F output extension cable
1119-100	100 ft. VGA 15-pin M/M or M/F output extension cable
1143-012	12 ft. 5-BNC cable for RGBH&V
1143-025	25 ft. 5-BNC cable for RGBH&V
1143-050	50 ft. 5-BNC cable for RGBH&V
1143-100	100 ft. 5-BNC cable for RGBH&V
1206	6 ft. HD-15M to 5-BNC cable
1207	6 ft. HD-15F to 5-BNC cable

Custom cable lengths are available. Call for information.

REAR CONNECTOR PIN-OUTS

POWER:	AC Line		
HD-15 CONNECTOR For VGA	1 ..... Red		
	2 ..... Green		
	3 ..... Blue		
	4 ..... n/c		
	5 ..... Ground		
	6 ..... Red Ground		
	7 ..... Green Ground		
	8 ..... Blue Ground		
	9 ..... n/c		
	10 ..... Ground		
	11 ..... n/c		
	12 ..... n/c		
	13 ..... H-Sync Out		
	14 ..... V-Sync Out		
	15 ..... n/c		
MINI-DIN-4 CONNECTORS For S-Video(1) and S-Video(2)	4 ..... Ground		
	3 ..... Ground		
	2 ..... Luminance		
	1 ..... Chrominance		
BNC CONNECTORS For Video(1), Video(2), Y/G, U/B, CSYNC, R, G, B, CS and HV	1 ..... Signal (Center)		
	2 ..... Ground (Shell)		
DB-9 CONNECTOR For RS-232 Remote	1 ..... DCD	4 ..... DTR	7 ..... RTS
	2 ..... RXD	5 ..... GROUND	8 ..... CTS
	3 ..... TXD	6 ..... DSR	9 ..... NO CONNECTION
RCA CONNECTOR For Audio(1), Audio(2), Audio (Component), Audio (VGA), Audio Out	R ..... RIGHT CHANNEL (Red)		
	L ..... LEFT CHANNEL (White)		

WARRANTY

Communications Specialties, Inc. (CSI) warrants that for a period of three years after purchase by the Buyer, Deuce Pro will will be free from defects in material and workmanship under normal use and service. A Return Material Authorization (RMA) number must be obtained from CSI before any equipment is returned by the Buyer. All material must be shipped to CSI at the expense and risk of the Buyer.

CSI's obligation under this warranty will be limited, at its option, to either the repair or replacement of defective units, including free materials and labor. In no event shall CSI be responsible for any incidental or consequential damages or loss of profits or goodwill.

CSI shall not be obligated to replace or repair equipment that has been damaged by fire, war, acts of God, or similar causes, or equipment that has been serviced by unauthorized personnel, altered, improperly installed, or abused.

RMA numbers and repairs can be obtained from:

Communications Specialties, Inc.
55 Cabot Court
Hauppauge, NY 11788 USA
TEL: (631) 273-0404
FAX: (631) 273-1638

or, in the Asia Pacific Region:

Communications Specialties Pte Ltd
Singapore
TEL: +65 6391 8790
FAX: +65 6396 0138
(See page 3 of this manual for complete address)

RMA numbers can also be obtained from our web site:

http://www.commspecial.com

Please have your serial number (located underneath your unit) available when contacting us.

Deuce® Pro

Intelligent Video Scaler

RS-232 REMOTE CONTROL PROTOCOL

(For 2210A version)

WORLD HEADQUARTERS
55 Cabot Court
Hauppauge, NY 11788 USA
TEL:(631) 273-0404
FAX:(631) 273-1638
WWW: http://www.commspecial.com
EMAIL: info@commspecial.com

Singapore Office
100 Beach Road
#22-09 Shaw Tower
Singapore 189702
TEL: +65 6391 8790
FAX: +65 6396 0138
EMAIL: csiasia@commspecial.com

Copyright ©2002

P/N 121819 Rev.B

DOCUMENT CONVENTIONS

Conventions are explained as follows:

This	Represents
bold	Commands. To carry out a command, type the command and then press the ENTER key.
italic	Placeholders that represent the parameter information you must provide. For example, if you are asked to type *optional parameter,* you would type the actual name of a parameter instead of the word shown in italic. Italic type also indicates a return value.
<cr>	Carriage return or the enter key.

COMMANDS FOR REMOTE OPERATION

Communication Parameters:

Use 9600 baud, 8N1, generic TTY, no flow control.

Command Formats:

All commands are case insensitive.
Illegal commands or commands with illegal parameters have no effect. Returns *Unknown Cmd.*

Write Format:

two_letter_command_name:, *optional_parameter <cr>*.

Example: is:, 1

Lock and Unlock Command Format:

two_letter_command_name <cr>.

Example: ul

Read Format:

two_letter_command_name: <cr>.

Example: if:

Return value = **two_letter_command_name: =** *register_value.*

Example: if: = 1

Return Message Format:

System Reset (sr:) commands returns *CSI product-name version number*.

Lock and Unlock (lo:, ul:) returns parameters last settings.

Custom Reset and Custom H&V Reset (rc:, rp:) returns no parameters.

HOW TO INSTALL A CABLE

On the Deuce Pro, connect an RS-232 serial cable to the RS-232 remote connector located on the upper left rear panel. This cable should be wired with all nine pins connected on a one-for-one basis (i.e. pin 1 wired to pin 1).

REMOTE COMMAND TABLE

Command	Parameter	Description	Defaults
	Deuce Pro		*Deuce Pro*
sr		System Reset	
rc		Custom Reset	
rp		Custom H&V Reset	
lo		lock panel	
ul		unlock panel	d
is	0	Composite 1 Input Source	d
	1	S-Video 1 Input Source	
	2	Composite 2 Input Source	
	3	S-Video 2 Input Source	
	4	YUV Input Source	
	5	RGB Input Source	
	6	VGA Input Source	
	7	Video 1 Input Source	
	8	Video 2 Input Source	
if	0	Normal (4:3) Input Format	d
	1	Letter (16:9) Input Format	
	2	1.85:1 Input Format	
	3	2.35:1 Input Format	
of	0	640x480 Output Format	d
	1	852x480 Output Format	
	2	800x600 Output Format	
	3	832x624 Output Format	
	4	1024x768 Output Format	
	5	1280x768 Output Format	
	6	1280x1024 Output Format	
	7	1365x1024 Output Format	
	8	Custom 1 Output Format	
	9	Custom 2 Output Format	
or	0	60 Output Rate	d
	1	75 Output Rate	
	2	Locked Output rate	
hp	#[1..512]	horizontal position	resolution dependent
vp	# [1..256]	vertical position	resolution dependent
br	# [-128..127]	brightness	32
co	# [0..63]	contrast	44
sa	# [1..4095]	saturation	2070
hu	# [-512..512]	hue	0
de	# [0..4]	Detail	0
ln	# [0..4]	Luma Noise Reduction	0
cn	# [0..4]	Chroma Noise Reduction	0
vc	0/1	Video Crop OFF/ON	0
vn		Version Number	

N/A = not applicable
= a number within the range specified within the brackets